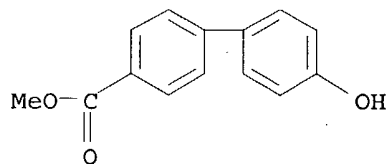


=> d pn bib hitstr 60-84

L37 ANSWER 60 OF 84 USPATFULL on STN
PI US 5133896 19920728
WO 8905792 19890629
AN 92:61673 USPATFULL
TI Cyanohydrin derivatives and their use in liquid crystal materials and devices
IN Coates, David, Wimborne, England
Greenfield, Simon, Poole, England
Sage, Ian C., Broadstone, England
PA The Secretary of State for Defence in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England (non-U.S. government)
PI US 5133896 19920728
WO 8905792 19890629
AI US 1990-543744 19900711 (7)
WO 1988-GB1111 19881215
19900711 PCT 371 date
19900711 PCT 102(e) date
PRAI GB 1987-29502 19871218
DT Utility
FS Granted
EXNAM Primary Examiner: Stoll, Robert L.; Assistant Examiner: Wu, Shean C.
LREP Nixon & Vanderhye
CLMN Number of Claims: 23
ECL Exemplary Claim: 1
DRWN 11 Drawing Figure(s); 6 Drawing Page(s)
LN.CNT 982
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 40501-41-5
(reaction of, in formation of cyanohydrin derivs. for liquid-crystal mixts.)
RN 40501-41-5 USPATFULL
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L37 ANSWER 61 OF 84 USPATFULL on STN
PI US 5132041 19920721
AN 92:59614 USPATFULL
TI Liquid crystal compounds having ether tail moiety
IN Cumming, William J., Chelmsford, MA, United States
Gaudiana, Russell A., Merimack, NH, United States
McGowan, Cynthia, Stoneham, MA, United States
Minns, Richard A., Arlington, MA, United States
Naiman, Alaric, Cambridge, MA, United States
PA Polaroid Corporation, Cambridge, MA, United States (U.S. corporation)
PI US 5132041 19920721
AI US 1987-61072 19870623 (7)
RLI Continuation-in-part of Ser. No. US 1986-887620, filed on 21 Jul 1986, now abandoned
DT Utility
FS Granted

EXNAM Primary Examiner: Stoll, Robert L.; Assistant Examiner: Harris, C.
LREP Xiarhos, Louis G.
CLMN Number of Claims: 39
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 884

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

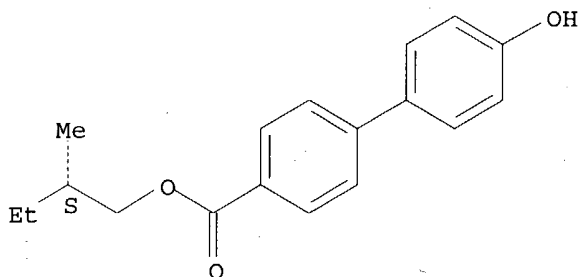
IT 91577-91-2P

(preparation and reaction of, in formation of smectic liquid crystals)

RN 91577-91-2 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

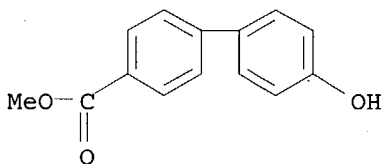


IT 40501-41-5

(reaction of, in preparation of smectic liquid crystals)

RN 40501-41-5 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L37 ANSWER 62 OF 84 USPATFULL on STN

PI US 5114615 19920519

AN 92:40341 USPATFULL

TI Liquid crystal compounds and intermediates thereof

IN Ishibashi, Shigeki, Musashino, Japan
Nakamura, Kouzaburou, Musashino, Japan

Maruno, Tohru, Musashino, Japan
Nakahata, Masaaki, Kawagoe, Japan

Negishi, Takaaki, Kawagoe, Japan

Urano, Fumiyoshi, Kawagoe, Japan

PA Wako Pure Chemical Industries, Ltd., Tokyo, Japan (non-U.S. corporation)
Nippon Telegraph and Telephone Corporation, Tokyo, Japan (non-U.S. corporation)

PI US 5114615 19920519

AI US 1991-765411 19910925 (7)

RLI Continuation of Ser. No. US 1988-225979, filed on 29 Jul 1988, now abandoned

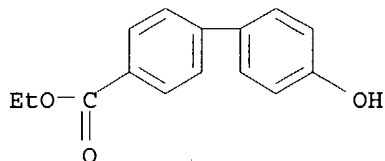
PRAI JP 1987-190193 19870731

DT Utility

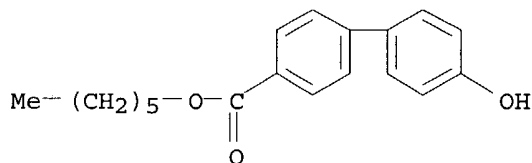
FS Granted

EXNAM Primary Examiner: Stoll, Robert L.; Assistant Examiner: Wu, Shean C.

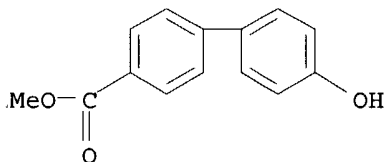
LREP Armstrong, Nikaido, Marmelstein, Kubovcik & Murray
 CLMN Number of Claims: 4
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 1259
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 50670-76-3
 (reaction of, in formation of liquid-crystal compds.)
 RN 50670-76-3 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA
 INDEX NAME)



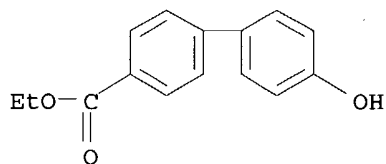
L37 ANSWER 63 OF 84 USPATFULL on STN
 PI US 5073306 19911217
 AN 91:101975 USPATFULL
 TI Optically active compound and liquid crystal composition containing same
 IN Nohira, Hiroyuki, Urawa, Japan
 Kamei, Masanao, Annaka, Japan
 Kanazawa, Hideki, Yotsukaichi, Japan
 Yamada, Yoko, Atsugi, Japan
 Etoh, Yuko, Tokorozawa, Japan
 PA Canon Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)
 PI US 5073306 19911217
 AI US 1989-385700 19890725 (7)
 RLI Division of Ser. No. US 1988-223363, filed on 25 Jul 1988, now patented,
 Pat. No. US 4918213, issued on 17 Apr 1990
 PRAI JP 1987-186575 19870728
 JP 1987-204343 19870818
 JP 1988-41456 19880224
 JP 1988-71035 19880325
 JP 1988-166781 19880706
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Maples, John S.; Assistant Examiner: Wu, Shean C.
 LREP Fitzpatrick, Cella, Harper & Scinto
 CLMN Number of Claims: 22
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 854
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 120223-98-5
 (reaction of, in formation of optically active compds. for liquid-crystal
 compns.)
 RN 120223-98-5 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, hexyl ester (9CI) (CA
 INDEX NAME)



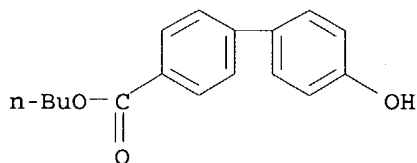
L37 ANSWER 64 OF 84 USPATFULL on STN
 PI US 5068384 19911126
 AN 91:96487 USPATFULL
 TI Phosphate salts of AB-polybenzoxazole monomer
 IN Harris, William J., Midland, MI, United States
 Lysenko, Zenon, Midland, MI, United States
 Hurtig, Carl W., Saginaw, MI, United States
 PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
 PI US 5068384 19911126
 AI US 1990-546596 19900629 (7)
 RLI Division of Ser. No. US 1989-380567, filed on 14 Jul 1989, now patented,
 Pat. No. US 4959492
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Reamer, James H.
 CLMN Number of Claims: 10
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 508
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 40501-41-5 50670-76-3 106986-59-8
 120223-98-5 123790-27-2 131802-88-5
 (nitration of)
 RN 40501-41-5 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA
 INDEX NAME)



RN 50670-76-3 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA
 INDEX NAME)

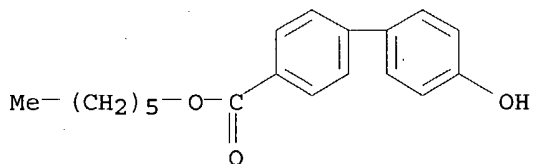


RN 106986-59-8 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, butyl ester (9CI) (CA
 INDEX NAME)



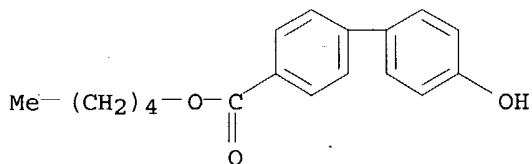
RN 120223-98-5 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, hexyl ester (9CI) (CA
INDEX NAME)



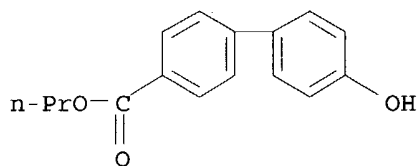
RN 123790-27-2 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, pentyl ester (9CI) (CA
INDEX NAME)



RN 131802-88-5 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, propyl ester (9CI) (CA
INDEX NAME)



L37 ANSWER 65 OF 84 USPATFULL on STN

PI US 5055225 19911008

AN 91:81974 USPATFULL

TI Alkyl thiobenzoate derivative, production of same and liquid crystal
display element

IN Naijoh, Shuichi, Tokyo, Japan

Inoue, Chozo, Tokyo, Japan

Kurotaki, Ayako, Tokyo, Japan

Nagai, Kimie, Tokyo, Japan

PA Showa Denko K.K., Tokyo, Japan (non-U.S. corporation)

PI US 5055225 19911008

AI US 1989-435872 19891114 (7)

PRAI JP 1988-288459 19881114

DT Utility

FS Granted

EXNAM Primary Examiner: Maples, John S.; Assistant Examiner: Tucker, Philip

LREP Sughrue, Mion, Zinn Macpeak & Seas

CLMN Number of Claims: 4

ECL Exemplary Claim: 3

DRWN No Drawings

LN.CNT 527

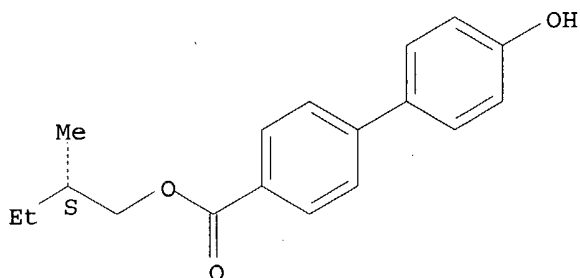
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 91577-91-2P

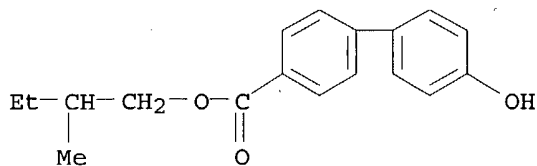
(preparation and reaction of, in formation of optically active compds. for
liquid-crystal devices)

RN 91577-91-2 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L37 ANSWER 66 OF 84 USPATFULL on STN
 PI US 5034153 19910723
 AN 91:58696 USPATFULL
 TI Liquid-crystalline polymer composition
 IN Uchida, Shunji, Chiba, Japan
 Morita, Kazuharu, Chiba, Japan
 Hashimoto, Kenji, Chiba, Japan
 PA Idemitsu Kosan Co., Ltd., Tokyo, Japan (non-U.S. corporation)
 PI US 5034153 19910723
 AI US 1990-577122 19900904 (7)
 RLI Continuation of Ser. No. US 1988-212475, filed on 28 Jun 1988, now
 abandoned
 PRAI JP 1987-159735 19870629
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Maples, John S.; Assistant Examiner: Treanor, Richard
 LREP Antonelli, Terry, Stout & Kraus
 CLMN Number of Claims: 6
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 904
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 97054-77-8
 (reaction of, in formation of ferroelec. liquid-crystal polymers)
 RN 97054-77-8 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 2-methylbutyl ester (9CI)
 (CA INDEX NAME)



L37 ANSWER 67 OF 84 USPATFULL on STN
 PI US 5011623 19910430
 AN 91:34145 USPATFULL
 TI Nonlinear optical material and nonlinear optical device
 IN Yoshinaga, Kazuo, Machida, Japan
 Kai, Takashi, Hadano, Japan
 Egara, Koichi, Tokyo, Japan

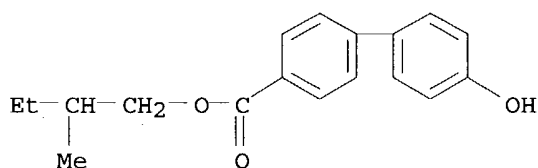
Toshida, Yomishi, Yokohama, Japan
Mitsutake, Hideaki, Tokyo, Japan
Sato, Koichi, Atsugi, Japan
Miyazaki, Takeshi, Ebina, Japan

PA Canon Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)
PI US 5011623 19910430
AI US 1989-381277 19890718 (7)
PRAI JP 1988-179097 19880720
JP 1988-334239 19881230
DT Utility
FS Granted
EXNAM Primary Examiner: Stoll, Robert L.; Assistant Examiner: Treanor, Richard
LREP Fitzpatrick, Cella, Harper & Scinto
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 752
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 97054-77-8P

(preparation and reaction of, in liquid crystal preparation for nonlinear optical

material compns.)

RN 97054-77-8 USPATFULL
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 2-methylbutyl ester (9CI)
(CA INDEX NAME)

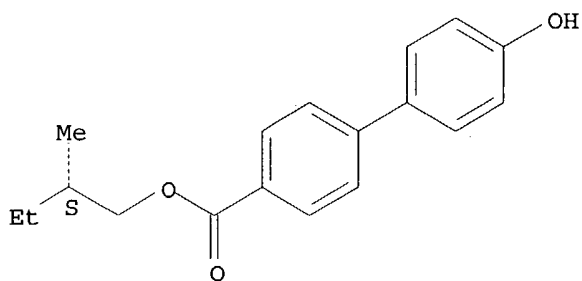


L37 ANSWER 68 OF 84 USPATFULL on STN
PI US 4988460 19910129
AN 91:8558 USPATFULL
TI Ferroelectric liquid-crystalline polymeric composition
IN Morita, Kazuharu, Chiba, Japan
Uchida, Shunji, Chiba, Japan
Yuasa, Kimihiro, Chiba, Japan
PA Idemitsu Kosan Company Limited, Tokyo, Japan (non-U.S. corporation)
PI US 4988460 19910129
AI US 1990-539321 19900613 (7)
RLI Continuation of Ser. No. US 1988-243425, filed on 12 Sep 1988, now abandoned
PRAI JP 1987-249209 19871002
DT Utility
FS Granted
EXNAM Primary Examiner: Stoll, Robert L.; Assistant Examiner: Treanor, Richard
LREP Frishauf, Holtz, Goodman & Woodward
CLMN Number of Claims: 18
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1111
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 91577-91-2P

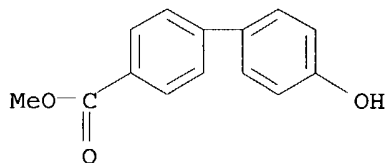
(preparation and reaction of, in formation of ferroelec. liquid-crystal polymeric compns.)

RN 91577-91-2 USPATFULL
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L37 ANSWER 69 OF 84 USPATFULL on STN
PI US 4973738 19901127
AN 90:91250 USPATFULL
TI Liquid crystal compounds having naphthalene nucleus
IN Suzuki, Yoshiichi, Tokyo, Japan
Kuwamura, Ichiro, Tokyo, Japan
Hagiwara, Takashi, Tokyo, Japan
PA Showa Shell Sekiyu K.K., Tokyo, Japan (non-U.S. corporation)
PI US 4973738 19901127
AI US 1989-344646 19890428 (7)
PRAI JP 1988-103763 19880428
DT Utility
FS Granted
EXNAM Primary Examiner: Lone, Werren B.; Assistant Examiner: Clarke, Vera C.
LREP Sughrue, Mion, Zinn, Macpeak & Seas
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN 11 Drawing Figure(s); 7 Drawing Page(s)
LN.CNT 316
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 40501-41-5P
(preparation and reaction of, in formation of liquid crystals)
RN 40501-41-5 USPATFULL
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA
INDEX NAME)



L37 ANSWER 70 OF 84 USPATFULL on STN
PI US 4959492 19900925
AN 90:75226 USPATFULL
TI Process to synthesize AB-PBO monomer and phosphate salts thereof
IN Harris, William J., Midland, MI, United States
Lysenko, Zenon, Midland, MI, United States
Hurtig, Carl W., Saginaw, MI, United States
PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
PI US 4959492 19900925
AI US 1989-380567 19890714 (7)
DT Utility
FS Granted

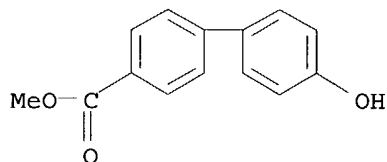
EXNAM Primary Examiner: Reamer, James H.
CLMN Number of Claims: 34
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 591

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 40501-41-5 50670-76-3 106986-59-8
120223-98-5 123790-27-2 131802-88-5
(nitration of)

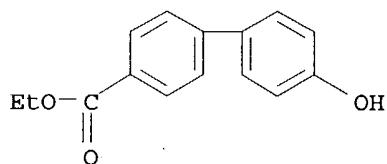
RN 40501-41-5 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA
INDEX NAME)



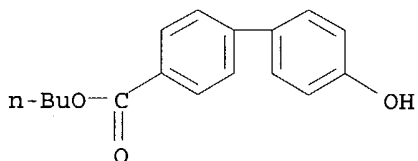
RN 50670-76-3 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA
INDEX NAME)



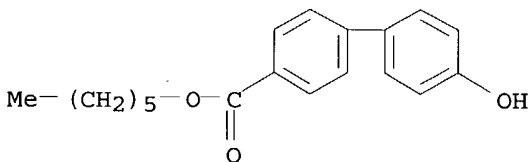
RN 106986-59-8 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, butyl ester (9CI) (CA
INDEX NAME)



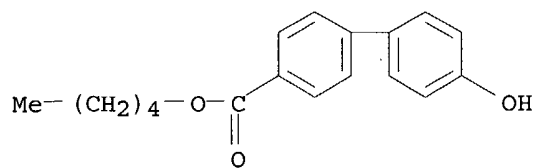
RN 120223-98-5 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, hexyl ester (9CI) (CA
INDEX NAME)

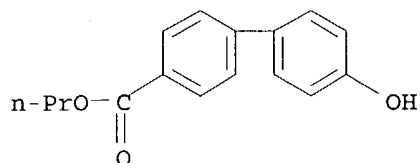


RN 123790-27-2 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, pentyl ester (9CI) (CA
INDEX NAME)

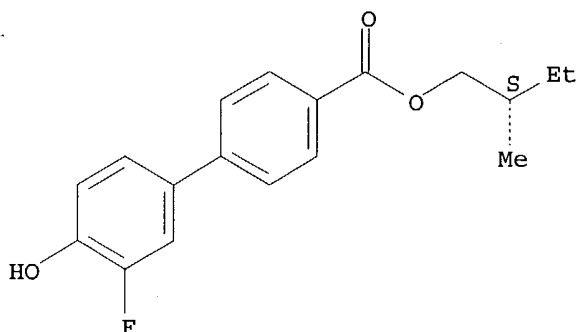


RN 131802-88-5 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, propyl ester (9CI) (CA INDEX NAME)



L37 ANSWER 71 OF 84 USPATFULL on STN
 PI US 4943386 19900724
 AN 90:57614 USPATFULL
 TI Liquid crystalline compounds having substituents
 IN Takehara, Sadao, Yono, Japan
 Fujisawa, Toru, Kawaguchi, Japan
 Arai, Yoshi, Hasuda, Japan
 Kurokawa, Jitsuo, Ohmiya, Japan
 PA Dainippon Ink & Chemicals, Inc., Tokyo, Japan (non-U.S. corporation)
 Kawamura Institute of Chemical Research, Saitama, Japan (non-U.S. corporation)
 PI US 4943386 19900724
 AI US 1988-252926 19881004 (7)
 RLI Division of Ser. No. US 1988-161421, filed on 23 Feb 1988, now patented,
 Pat. No. US 4828754 which is a continuation of Ser. No. US 1986-815935,
 filed on 3 Jan 1986, now abandoned
 PRAI JP 1985-1791 19850109
 JP 1985-71628 19850404
 JP 1985-71629 19850404
 JP 1985-81688 19850417
 JP 1985-90676 19850426
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Maples, John S.; Assistant Examiner: Treanor, Richard
 LREP Sherman and Shalloway
 CLMN Number of Claims: 19
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 1563
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 106316-31-8P
 (preparation of, for liquid-crystal display devices)
 RN 106316-31-8 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-fluoro-4'-hydroxy-, 2-methylbutyl
 ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



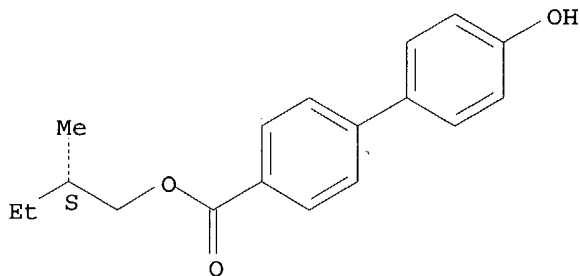
IT 91577-91-2

(reaction of, in preparation of liquid crystals for display devices)

RN 91577-91-2 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L37 ANSWER 72 OF 84 USPATFULL on STN

PI US 4918213 19900417

AN 90:30154 USPATFULL

TI Optically active compound and liquid crystal composition containing same

IN Nohira, Hiroyuki, Urawa, Japan

Kamei, Masanao, Annaka, Japan

Kanazawa, Hideki, Yotsukaichi, Japan

Yamada, Yoko, Atsugi, Japan

Etoh, Yuko, Tokorozawa, Japan

PA Canon Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)

PI US 4918213 19900417

AI US 1988-223363 19880725 (7)

PRAI JP 1987-186575 19870728

JP 1987-204343 19870818

JP 1988-41456 19880224

JP 1988-71034 19880325

DT Utility

FS Granted

EXNAM Primary Examiner: Lee, Mary C.; Assistant Examiner: Richter, J.

LREP Fitzpatrick, Cella, Harper & Scinto

CLMN Number of Claims: 10

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 900

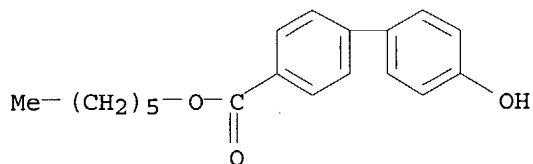
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 120223-98-5

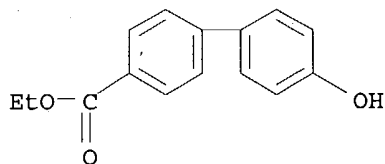
(reaction of, in formation of optically active compds. for liquid-crystal compns.)

RN 120223-98-5 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, hexyl ester (9CI) (CA INDEX NAME)

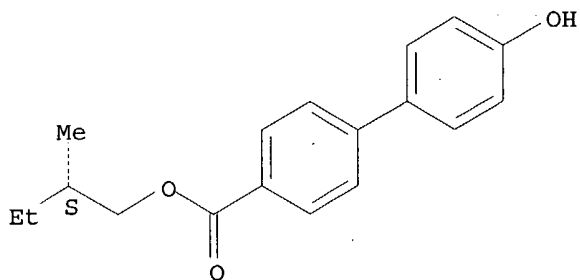


L37 ANSWER 73 OF 84 USPATFULL on STN
PI US 4913839 19900403
AN 90:25504 USPATFULL
TI Ferroelectric liquid crystal polymer
IN Uchida, Shunji, Sodegaura, Japan
Morita, Kazuharu, Sodegaura, Japan
Hashimoto, Kenji, Ichihara, Japan
PA Idemitsu Kosan Co., Ltd., Tokyo, Japan (non-U.S. corporation)
PI US 4913839 19900403
AI US 1989-340033 19890418 (7)
RLI Division of Ser. No. US 1986-383, filed on 22 Dec 1986, now patented,
Pat. No. US 4844835
PRAI JP 1985-292274 19851226
JP 1986-120313 19860527
JP 1986-122155 19860529
JP 1986-217235 19860917
DT Utility
FS Granted
EXNAM Primary Examiner: Terapane, John F.; Assistant Examiner: Thomas, J. E.
LREP Antonelli, Terry & Wands
CLMN Number of Claims: 17
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1238
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 50670-76-3P 91577-91-2P 112231-63-7P
(preparation and reaction of, in preparation of ferroelec. polyester liquid crystal)
RN 50670-76-3 USPATFULL
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)

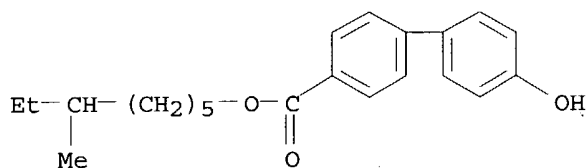


RN 91577-91-2 USPATFULL
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

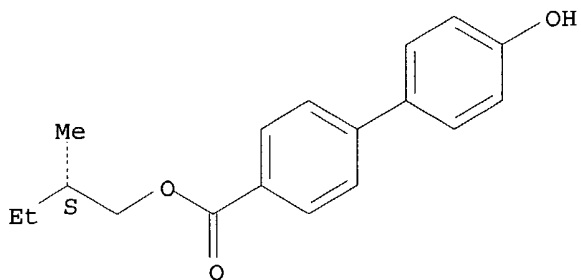


RN 112231-63-7 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 6-methyloctyl ester (9CI)
 (CA INDEX NAME)



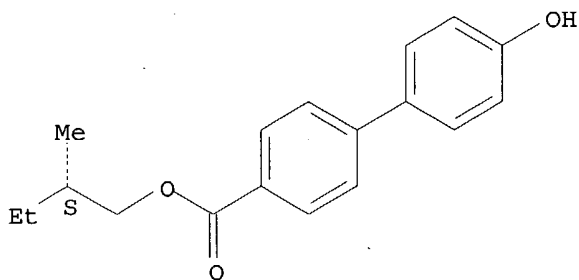
L37 ANSWER 74 OF 84 USPATFULL on STN
 PI US 4877858 19891031
 AN 89:89280 USPATFULL
 TI Liquid-crystalline polymer
 IN Hachiya, Satoshi, Kimitsu, Japan
 Uchida, Shunji, Kimitsu, Japan
 Hashimoto, Kenji, Kimitsu, Japan
 PA Idemitsu Kosan Co., Ltd., Tokyo, Japan (non-U.S. corporation)
 PI US 4877858 19891031
 AI US 1988-272010 19881116 (7)
 RLI Continuation-in-part of Ser. No. US 1987-136868, filed on 22 Dec 1987,
 now abandoned
 PRAI JP 1986-309466 19861229
 JP 1987-288475 19871117
 JP 1987-288476 19871117
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Morris, Theodore
 LREP Antonelli, Terry & Wands
 CLMN Number of Claims: 23
 ECL Exemplary Claim: 1
 DRWN 28 Drawing Figure(s); 28 Drawing Page(s)
 LN.CNT 1298
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 91577-91-2
 (reaction of, with unsatd. chloro compds.)
 RN 91577-91-2 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

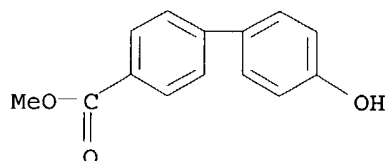


L37 ANSWER 75 OF 84 USPATFULL on STN
 PI US 4857227 19890815
 AN 89:67173 USPATFULL
 TI Liquid crystal mixtures having widened smectic temperature range
 IN Adams, Timothy G., Allston, MA, United States
 Sinta, Roger F., Woburn, MA, United States
 PA Polaroid Corporation Patent Department, Cambridge, MA, United States
 (U.S. corporation)
 PI US 4857227 19890815
 AI US 1987-69172 19870702 (7)
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Gron, Teddy S.; Assistant Examiner: Thomas, J. E.
 LREP Xiarhos, Louis G.
 CLMN Number of Claims: 9
 ECL Exemplary Claim: 1
 DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
 LN.CNT 659
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 91577-91-2P
 (preparation and reaction of, in formation of esters for smectic
 liquid-crystal mixts.)
 RN 91577-91-2 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
 (9CI) (CA INDEX NAME)

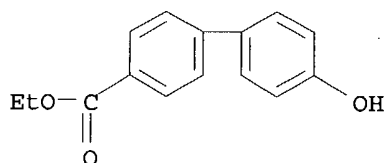
Absolute stereochemistry. Rotation (-).



IT 40501-41-5
 (reaction of, in formation of esters for smectic liquid-crystal mixts.)
 RN 40501-41-5 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA
 INDEX NAME)

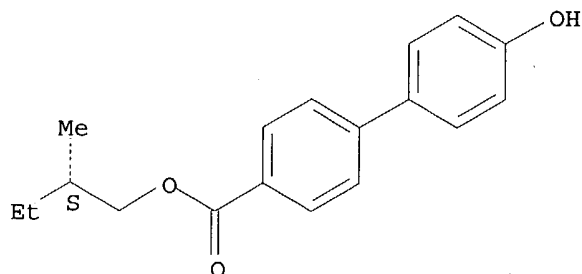


L37 ANSWER 76 OF 84 USPATFULL on STN
 PI US 4844835 19890704
 AN 89:53825 USPATFULL
 TI Ferroelectric liquid crystal polymer
 IN Uchida, Shunji, Kimitsu, Japan
 Morita, Kazuharu, Kimitsu, Japan
 Hashimoto, Kenji, Chiba, Japan
 PA Idenitsu Kosan Co., Ltd., Tokyo, Japan (non-U.S. corporation)
 PI US 4844835 19890704
 AI US 1986-383 19861222 (7)
 PRAI JP 1985-292274 19851226
 JP 1986-120313 19860527
 JP 1986-122155 19860529
 JP 1986-217235 19860917
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Gron, Teddy S.; Assistant Examiner: Thomas, J. E.
 LREP Antonelli, Terry & Wands
 CLMN Number of Claims: 3
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 1190
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 50670-76-3P 91577-91-2P 112231-63-7P
 (preparation and reaction of, in preparation of ferroelec. polyester liquid crystal)
 RN 50670-76-3 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)

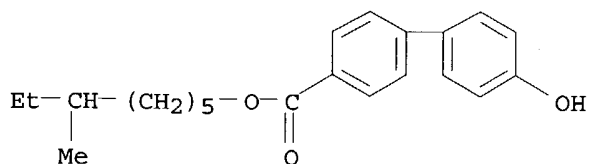


RN 91577-91-2 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

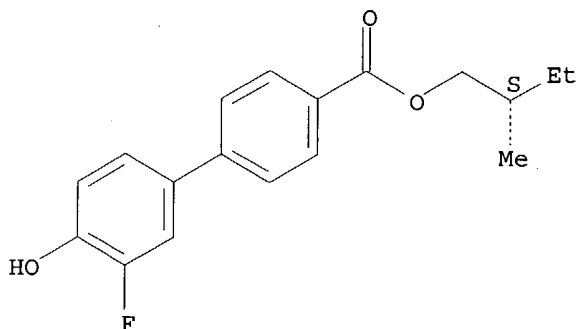


RN 112231-63-7 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 6-methyloctyl ester (9CI)
 (CA INDEX NAME)



L37 ANSWER 77 OF 84 USPATFULL on STN
 PI US 4828754 19890509
 AN 89:36424 USPATFULL
 TI Novel liquid crystalline compounds having substituents
 IN Takehara, Sadao, Yono, Japan
 Fujisawa, Toru, Kawaguchi, Japan
 Arai, Yoshi, Hasuda, Japan
 Kurokawa, Jitsuo, Ohmiya, Japan
 PA Dainippon Ink & Chemicals, Inc., Tokyo, Japan (non-U.S. corporation)
 Kawamura Institute of Chemical Res., Saitama, Japan (non-U.S. corporation)
 PI US 4828754 19890509
 AI US 1988-161421 19880223 (7)
 RLI Continuation of Ser. No. US 1986-815935, filed on 3 Jan 1986, now abandoned
 PRAI JP 1985-1791 19850109
 JP 1985-71628 19850404
 JP 1985-81688 19850417
 JP 1985-90676 19850426
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Gron, Teddy S.; Assistant Examiner: Thomas, J. E.
 LREP Sherman and Shalloway
 CLMN Number of Claims: 21
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 1629
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 106316-31-8P
 (preparation of, for liquid-crystal display devices)
 RN 106316-31-8 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-fluoro-4'-hydroxy-, 2-methylbutyl ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



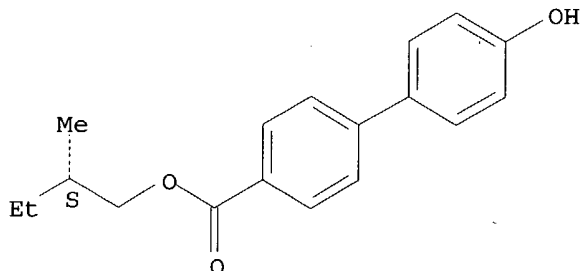
IT 91577-91-2

(reaction of, in preparation of liquid crystals for display devices)

RN 91577-91-2 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L37 ANSWER 78 OF 84 USPATFULL on STN

PI US 4818807 19890404

AN 89:25896 USPATFULL

TI Liquid-crystalline polymer

IN Morita, Kazuharu, Sodegaura, Japan

Uchida, Shunji, Sodegaura, Japan

Hachiya, Satoshi, Sodegaura, Japan

PA Idemitsu Kosan Co., Ltd., Tokyo, Japan (non-U.S. corporation)

PI US 4818807 19890404

AI US 1987-92612 19870903 (7)

PRAI JP 1986-206851 19860904

JP 1987-173025 19870713

JP 1987-179139 19870720

DT Utility

FS Granted

EXNAM Primary Examiner: Welsh, Maurice J.

LREP Antonelli, Terry & Wands

CLMN Number of Claims: 14

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 1217

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

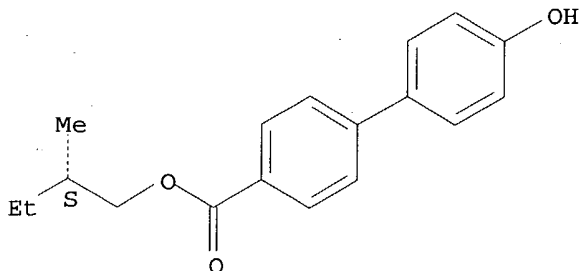
IT 91577-91-2P

(preparation and reaction of, in formation of liquid-crystal polymers)

RN 91577-91-2 USPATFULL

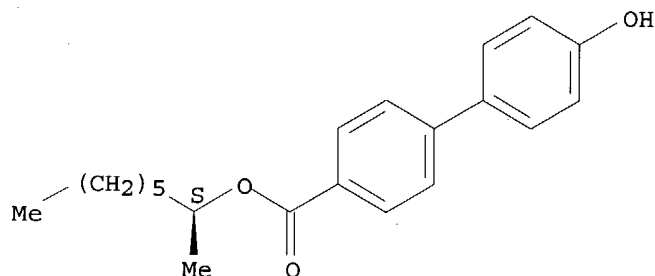
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L37 ANSWER 79 OF 84 USPATFULL on STN
 PI US 4816181 19890328
 AN 89:23137 USPATFULL
 TI Liquid crystal carbonatobenzoic acid derivative and composition
 IN Miyazawa, Kazutoshi, Yokohamashi, Japan
 Saito, Shinichi, Yokohamashi, Japan
 Inoue, Hiromichi, Yokohamashi, Japan
 Inukai, Takashi, Yokohamashi, Japan
 Terashima, Kanetsugu, Yokohamashi, Japan
 PA Chisso Corporation, Tokyo, Japan (non-U.S. corporation)
 PI US 4816181 19890328
 AI US 1986-900812 19860827 (6)
 PRAI JP 1985-187982 19850827
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Gron, Teddy S.; Assistant Examiner: Thomas, J. E.
 LREP Wenderoth, Lind & Ponack
 CLMN Number of Claims: 3
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 380
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 111153-19-6P
 (preparation and esterification of, liquid crystals from)
 RN 111153-19-6 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1S)-1-methylheptyl ester
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.

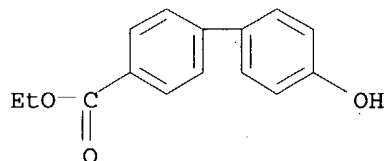


L37 ANSWER 80 OF 84 USPATFULL on STN
 PI US 4778621 19881018
 AN 88:67217 USPATFULL
 TI Ester compound
 IN Isoyama, Toyoshiro, Yokohama, Japan
 Ogawa, Tetsuya, Yokohama, Japan
 Sugimori, Shigeru, Musashino, Japan
 PA Chisso Corporation, Japan (non-U.S. corporation)
 PI US 4778621 19881018
 AI US 1986-917491 19861010 (6)
 PRAI JP 1985-228346 19851014
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Gron, Teddy S.
 LREP Leydig, Voit & Mayer
 CLMN Number of Claims: 5
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 208
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 50670-76-3

(reactions of, in preparation of nematic liquid crystals)

RN 50670-76-3 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L37 ANSWER 81 OF 84 USPATFULL on STN

PI US 4689176 19870825

AN 87:60114 USPATFULL

TI Novel optically active compound and liquid crystal composition containing same

IN Inoue, Hiromichi, Yokohamashi, Japan
Saito, Shinichi, Yokohamashi, Japan
Miyazawa, Kazutoshi, Yokohamashi, Japan
Inukai, Takashi, Yokohamashi, Japan
Terashima, Kanetsugu, Yokohamashi, Japan

PA Chisso Corporation, Tokyo, Japan (non-U.S. corporation)

PI US 4689176 19870825

AI US 1985-811757 19851220 (6)

PRAI JP 1984-277077 19841226

DT Utility

FS Granted

EXNAM Primary Examiner: Gron, Teddy S.; Assistant Examiner: Thomas, J. E.

LREP Wenderoth, Lind & Ponack

CLMN Number of Claims: 8

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 500

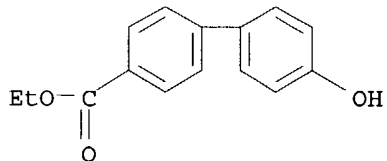
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 50670-76-3

(reaction of, with methylheptyl toluenesulfonate)

RN 50670-76-3 USPATFULL

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L37 ANSWER 82 OF 84 USPATFULL on STN

PI US 4589996 19860520

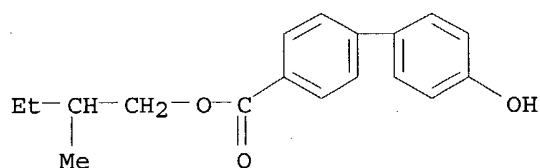
AN 86:29573 USPATFULL

TI Liquid crystalline carbonic acid esters and liquid crystal compositions containing the same

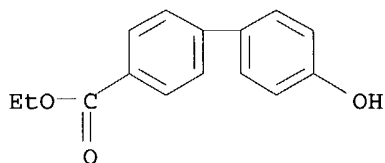
IN Inoue, Hiromichi, Yokohamashi, Japan
Saito, Shinichi, Yokohamashi, Japan
Terashima, Kanetsugu, Yokohamashi, Japan
Inukai, Takashi, Yokohamashi, Japan
Furukawa, Kenji, Yokosukashi, Japan

PA Chisso Corporation, Osaka, Japan (non-U.S. corporation)
 PI US 4589996 19860520
 AI US 1984-645097 19840828 (6)
 PRAI JP 1983-162766 19830905
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Gron, Teddy S.
 LREP Philpitt, Fred
 CLMN Number of Claims: 7
 ECL Exemplary Claim: 1,2
 DRWN No Drawings
 LN.CNT 595
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

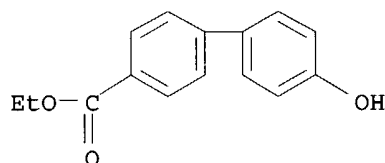
IT 97054-77-8P
 (preparation and reaction with nonyloxycarbonyloxybenzoic acid chloride, in preparation of liquid crystalline compound)
 RN 97054-77-8 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 2-methylbutyl ester (9CI)
 (CA INDEX NAME)



L37 ANSWER 83 OF 84 USPATFULL on STN
 PI US 4179578 19791218
 AN 79:51126 USPATFULL
 TI Para-phenyl stilbene derivatives
 IN Fleck, Fritz, Bottmingen, Switzerland
 Kittl, Hans, Riehen, Switzerland
 Valenti, Salvatore, Bottmingen, Switzerland
 PA Sandoz Ltd., Basel, Switzerland (non-U.S. corporation)
 PI US 4179578 19791218
 AI US 1977-787510 19770414 (5)
 RLI Division of Ser. No. US 1975-596287, filed on 16 Jul 1975, now patented, Pat. No. US 4032558 which is a continuation of Ser. No. US 1972-316448, filed on 19 Dec 1972, now abandoned
 PRAI CH 1971-18907 19711224
 CH 1972-1123 19720126
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Myers, Jane S.
 LREP Sharkin, Gerald D., Vila, Richard E., Doyle, Thomas C.
 CLMN Number of Claims: 5
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 1151
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 50670-76-3
 (esterification of, with fumaroyl chloride)
 RN 50670-76-3 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L37 ANSWER 84 OF 84 USPATFULL on STN
 PI US 4032558 19770628
 AN 77:34303 USPATFULL
 TI Para-phenyl stilbene derivatives
 IN Fleck, Fritz, Bottmingen, Switzerland
 Kittl, Hans, Riehen, Switzerland
 Valenti, Salvatore, Bottmingen, Switzerland
 PA Sandoz Ltd., Basel, Switzerland (non-U.S. corporation)
 PI US 4032558 19770628
 AI US 1975-596287 19750716 (5)
 RLI Continuation of Ser. No. US 1972-316448, filed on 19 Dec 1972, now
 abandoned
 DT Utility
 FS Granted
 EXNAM Primary Examiner: Torrence, Dolph H.
 LREP Sharkin, Gerald D., Vila, Richard E., Doyle, Thomas C.
 CLMN Number of Claims: 4
 ECL Exemplary Claim: 1
 DRWN No Drawings
 LN.CNT 1144
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 IT 50670-76-3
 (esterification of, with fumaroyl chloride)
 RN 50670-76-3 USPATFULL
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA
 INDEX NAME)



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